

# AMERICAN MUSEUM NOVITATES

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY  
CITY OF NEW YORK JULY 17, 1951 NUMBER 1528

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## NOTES ON AUSTRALIAN MARSUPIALS RARE OR LITTLE-KNOWN IN THE UNITED STATES

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When I visited Sydney, Australia, in 1947 and 1948, Mr. Ellis LeG. Troughton, Curator of Mammals at the Australian Museum, kindly made it possible for me to examine a number of the rarer forms in his charge. The notes offered herewith are the result of those studies.

### *PLANIGALE INGRAMI BRUNNEUS*

This description is drawn from the type specimen (Australian Museum No. M.2174), an adult female.

A minute phascogaline with greatly flattened skull. Both the bulla and the periotic are considerably inflated (length of bulla, 3.0 mm.; periotic, 1.8). Nasals wide at the base (2.8 mm.).

The premolars,  $p^1$  and  $p^3$ , are nearly equal in size and small (their crown lengths, 0.5 and 0.6), but  $p^4$  is larger (0.75) and higher (0.7). The last molar is not greatly shortened.

In the lower jaw  $p_4$  is much reduced,  $p_3$  being easily the largest of the three. Crown lengths are  $p_1$ , 0.5;  $p_3$ , 0.7;  $p_4$ , 0.3 mm.

### *PARANTECHINUS APICALIS*

This note is based upon Australian Museum No. 601, an adult female, from Salt River, Western Australia.

Skull small but strongly formed. Nasals slightly broadened at their bases. Incisive foramina short (2.7 mm.). Posterior palatal foramina large. Bullae large (length, 4.7 mm.). Periotics somewhat inflated. The last molars are fully in place and worn.

Incisive gradient  $i^2 > i^3 > i^4$ . The first incisor modified and sepa-

rated by space from  $i^2$ . In the premolars  $p^1$  is twice the size of  $p^4$  and half the size of  $p^3$ , and the crown lengths of  $p^1$  and  $p^3$  are 1.2 mm. and 1.7, respectively. Dimensions of  $p^4$  are: height, 0.9 mm.; length, 0.9; width, 0.7. The last molar greatly shortened.

The lower canine is contiguous with  $i^3$ . The crown lengths of  $p_1$  and  $p_3$ , respectively, measure 1.6 mm. and 2.0. The measurements of  $p_4$  are: height, 0.6; length, 0.7; width, 0.7.

In 1947 I reviewed the little that was known of *apicalis* (Tate, 1947, p. 137), and it is good to be able to supplement those observations with notes drawn from a second specimen, especially as the hinder part of the skull of the type is destroyed.

#### THE TYPE OF *DASYURUS GRACILIS*

The extraction and cleaning of the type skull (Australian Museum No. M.1551) of this supposedly extremely small species of dasyure have shown that it is in fact a very young animal in which the last molars are not yet fully in place. We now have a considerable series of adults of north Queensland "tiger cats," and the measured teeth of this type readily fit the teeth of the adults. Furthermore, it now appears that the north Queensland animals are but weakly distinguishable from *D. maculatus* of New South Wales and southern Queensland, and the pronounced ventral spotting of the former is an inconstant character. I conclude that *D. gracilis* should be reduced to rank as a subspecies of *D. maculatus*. The dental measurements are:  $i^1$ , 1.5 mm.;  $i^2$ , 1.7;  $i^3$ , 1.8;  $i^4$ , 2.0;  $p^1$ , 3.6 by 2.0;  $p^3$ , 4.1 by 2.8;  $m^1$ , 6.4 by 4.2;  $m^2$ , 6.9 by 5.4;  $m^3$ , 6.5 by 6.0;  $m^4$ , —;  $m^{1-3}$ , 19.7;  $i_1$ , 1.9;  $i_2$ , 1.9;  $i_3$ , 1.9;  $p_1$ , 4.0 by 2.2;  $p_3$ , 4.5 by 2.5;  $m_{1-4}$ , 24.1.

#### THE SKULL OF THE PIG-FOOTED BANDICOOT, *CHAEROPUS ECAUDATUS*

These notes are based on the skull (Australian Museum No. 422) of a young adult of this rare marsupial. I compare it with *Perameles*.

Nasals relatively narrow (greatest width, 5.0 mm.). Lacrimal sutures close to and parallel to orbit. Palate much fenestrated, provided with three sets of large openings and other smaller ones, in addition to the incisive foramina. Bulla rounded, slightly larger proportionately than that of *Perameles*. Periotic ridge-like and quite uninflated.

Upper incisors subequal in size and slightly overlapping ( $i^1$

over  $i^2$ ,  $i^2$  over  $i^3$ , etc.). The fifth incisor not set off from  $i^4$  by a diastema. Canine premolariform and very short, smaller than  $p^1$ . The third premolar is the largest of the premolars;  $p^4$  very small and subterete, its crown worn flat on the occlusal surface. This tooth may in fact be the deciduous  $p^4$  still in place.

The first molar with its anterior triangle much less shortened anteroposteriorly than its posterior triangle or than the triangles of  $m^{2-3}$ . Its protocone well developed, as in the other two molars. The fourth molar just erupting, its protocone and paracone visible. Apparently it will become a normally shortened terminal molar.

Crown lengths of upper teeth are:  $i^1$ , 1.6 mm.;  $i^2$ , 1.7;  $i^3$ , 1.8;  $i^4$ , 1.8;  $i^5$ , 1.4;  $c$ , 1.8;  $p^1$ , 2.4;  $p^3$ , 2.7;  $p^4$ , 1.2;  $m^{1-3}$ , 10.7;  $m^1$ , 4.3;  $m^2$ , 3.0;  $m^3$ , 2.9.

The articular process of the mandible stands very high; the dental ramus is strongly bowed beneath downward. The lower incisors (three) are very low;  $i_3$  is large and strongly bifid. The lower canine is specialized, very low, markedly premolariform, with large anterior and posterior cusps which cause it to resemble  $p_1$  very closely. It is continuous with  $i_3$  and possibly double-rooted. Both  $p_3$  and  $p_4$  have distinct anterior and posterior supplemental cusps. The crown of  $p_4$  (possibly the deciduous tooth) is broadly ovate, showing traces of two or three minute surface cusps.

The talonid portions of the molars essentially duplicate their anterior trigonids, the antero-external cusps of the talonid and of the metaconid being exceptionally tall. But in the partly erupted  $m_4$  only the trigonid is tall. Its talonid remains much lower. The profile of the upper tooth row is uneven, the molar series bowed down, the premolars and incisors arched up. All the molars are hypsodont. Crown lengths of the lower teeth are:  $i_1$ , 1.4 mm.;  $i_2$ , 1.5;  $i_3$ , 2.7;  $c$ , —;  $p_1$ , 2.7;  $p_3$ , 3.3;  $p_4$ , 1.1.

#### THE DECIDUOUS PREMOLARS OF *MACROTIS LAGOTIS*

These observations were made on Australian Museum No. M.2955. The specimen is quite young, and  $dp^4$  is present on one side, while on the other it is represented by an alveolus. The tooth is compressed, slightly broader in front than behind, and irregularly triangular in profile. It projects from the maxilla only 2 mm. Its crown length is 2.6 mm.; its width, 1.3. (In  $p^3$  the same two dimensions are 4.6 by 1.4.) The tip of the erupting

permanent tooth can be observed just in front of the deciduous tooth.

In the lower jaw  $dp_4$  has more definite shape. It consists of a large anterior and a smaller posterior cusp. Its height is 1.8 mm.; its length and width in the tooth row are 2.3 by 1.1 (the same three dimensions in  $p_3$  are 2.9 mm., 5.2, 1.4). It appears that  $dp_4$  in *Macrotis* are becoming vestigial. The same condition is true in both the Peramelidae and the Dasyuridae.

#### *PETAURUS AUSTRALIS AUSTRALIS*

This large-sized *Petaurus* is represented in American collections by the northern race *P. a. reginae* (discussed earlier; see Tate, 1945, pp. 6-7). It was of special interest to obtain the measurements at Sydney of a nearly topotypical specimen of true *australis* for comparison with the material here. Crown lengths of the teeth are:  $p^1$ , 2.3 by 1.0;  $p^3$ , —;  $p^4$ , 2.7 by 1.7;  $m^1$ , 3.2 by 3.0;  $m^2$ , 2.6 by 2.8;  $m^3$ , 2.1 by 2.6;  $m^4$ , —;  $p_4$ , 1.8 by 1.4;  $m_1$ , 3.5 by 2.6;  $m_2$ , 3.0 by 2.6;  $m_3$ , 2.5 by 2.1;  $m_4$ , —.

#### *PROTEMNODON IRMA*

I studied three specimens of this strikingly handsome wallaby in the Australian Museum. Recently the American Museum of Natural History received a complete skeleton (A.M.N.H. No. 150319) as an exchange from the University of Edinburgh. Previously (Tate, 1948, pp. 306-307) I had reviewed the available material in this country. In table 1 it can be seen that the secant tooth  $p^3$  and the molariform  $dp^4$  vary considerably in size even in animals of the same sex (females). The same appears to be true in the case of  $m^1$ . The permanent secant tooth,  $p^4$ , is conspicuously longer than either one of the teeth it displaces.

#### *ONYCHOGALEA FRAENATA*

When working with this species (Tate, 1948, pp. 277-278) I was impressed by the exceptionally small sizes of the two sectorial teeth, the deciduous  $p^3$  and the permanent  $p^4$ . In table 2 I have assembled the crown lengths of the cheek teeth of eight skulls. These afford a reasonably adequate basis for comparison and should help investigators to determine whether they are examining young specimens with  $p^3$  and  $dp^4$  (molariform) or adults with  $p^4$  and  $m^1$  in place.

TABLE 1  
DIMENSIONS OF PERMANENT AND DECIDUOUS TEETH IN SOME SPECIMENS  
OF *Protemnodon irma*

	p <sup>3</sup>	dp <sup>4</sup>	p <sup>4</sup>	m <sup>1</sup>
Australian Mus. No. S.3076, female, Cranbrook, south Western Australia	4.6 × 2.9	5.4 × 4.6	—	5.9 × 5.7
Australian Mus. No. M.3562, female, Perth "zoo"	5.4 × 3.5	5.8 × 4.6	—	—
Australian Mus. No. S.1876, Cranbrook, Great Southern Railway, south Western Australia	—	—	6.4 × 4.0	6.3 × 6.2
A.M.N.H. No. 150319	5.3 × 3.5	5.7 × 5.5	—	7.1 × 6.2

TABLE 2  
CROWN LENGTHS OF CHEEK TEETH OF SOME SPECIMENS OF *Onychogalea fraenata*

	p <sup>3</sup>	dp <sup>4</sup>	p <sup>4</sup>	m <sup>1</sup>	m <sup>2</sup>	m <sup>3</sup>	m <sup>4</sup>
Australian Mus. No. A.16844, juvenile female, Lochaber, New South Wales	3.5	4.5	—	5.0	5.2	5.5	—
Australian Mus. No. M.2220	—	—	4.5	4.8	5.5	6.2	6.3
Australian Mus. No. M.2880, juvenile, Manilla, New South Wales	3.4	4.5	—	4.8	5.5	—	—
Australian Mus. No. 3441, female, New- castle, New South Wales	3.4	4.2	—	4.4	5.3	—	—
Australian Mus. No. S.1930	3.0	3.6	—	4.0	4.4	—	—
M.C.Z. No. 1879	3.2	3.9	—	5.1	5.6	6.3	—
M.C.Z. No. 1865	3.1	4.2	—	5.1	5.8	6.3	—
M.C.Z. No. 1877	3.2	4.0	—	4.4	5.3	—	—



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